

California Interagency Working Group on Indoor Air Quality

Meeting Minutes

June 13, 2001

**Department of Health Services Laboratory Facility
2151 Berkeley Way, Berkeley**

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SPECIAL PRESENTATION

The group was fortunate that Dr. Myrto Petreas of Cal/EPA's DTSC-Hazardous Materials Lab gave a very interesting presentation on recent studies of global exposures to Polybrominated Diphenyl Ethers and PBDEs in Human Tissues. Levels measured in California human subjects are the highest reported.

Overheads for her presentation can be viewed at

<http://www.cal-iaq.org/CIWG/PBDE.PDF>.

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AGENCY REPORTS ON CURRENT IAQ ACTIVITIES

California Air Resources Board / Indoor Air Quality & Personal Exposure Assessment Program

<http://www.arb.ca.gov/research/indoor/indoor.htm>

-- Peggy Jenkins (mjenkins@arb.ca.gov)

California Portable Classrooms Study (PCS). Phase I, the mail survey sent to 1000 schools in the spring, is nearing completion. Staff of Research Triangle Institute (RTI), the contractor for the study, are analyzing the data obtained in the survey. Phase II, the field measurement portion of the study, is in the planning stage, with the field pilot scheduled for late August and fieldwork beginning in September. Over 200 classrooms in 70 schools will be studied. The Air Resources Board recently approved a substantial augmentation to the project to cover costs of analysis of floor dust samples for pesticides, metals, polycyclic aromatic hydrocarbons, PCBs, and additional mold and moisture assessment. ARB convened a dust analysis advisory panel to advise the state regarding the dust analysis portions of the study. ARB and DHS staff also are exploring the possibility of including analysis for polybrominated diphenyl ethers (PBDEs), a class of persistent compounds used as flame retardants in the production of polyurethane foam (used in many furnishings), computer insulation, and other products. In recent years, PBDEs have been found at increasing levels in human tissue and breast milk. The study website was updated this summer (see <http://www.arb.ca.gov/research/indoor/pcs/pcs.htm>). Those interested are encouraged to subscribe to the listserv at the web address. Contact: Tom Phillips, tphillip@arb.ca.gov

Other IAQ Research Projects

- The kick-off meeting for ARB's Children's Bus Exposure Study was held recently in Sacramento. UC Riverside and UCLA investigators reviewed their plans with ARB staff for a comprehensive examination of pollutant levels in and near school buses in order to better understand and quantify children's exposures to vehicle exhaust components during their daily bus commutes. A variety of particulate and gaseous pollutants will be monitored during runs

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with diesel buses, gasoline buses, and alternative fuel (CNG) buses. The pilot is scheduled for late fall to winter. Contact: Scott Fruin, sfruin@arb.ca.gov

- Another children's study, the SB25 Indoor and Microenvironmental Study, also is just getting underway. This project will provide indoor and personal pollutant measurements at schools in three communities currently participating in ARB's SB25 outdoor monitoring projects. The data obtained will help ARB assess the adequacy of ambient monitoring station data for estimating children's exposures to pollutants. As part of ARB's Neighborhood Assessment Program, a health status questionnaire will also be administered to the children during the study to assess the extent of asthma, allergies, and related conditions in the study population. An enhanced public education and outreach task is under consideration as well that would provide detailed information to the children and their families on ways they can reduce their indoor and personal exposures to asthma and allergy triggers. Contact: Dorothy Shimer, dshimer@arb.ca.gov
- The Fresno Asthmatic Children's Exposure Study (FACES) is progressing with plans to begin the home-intensive monitoring this fall, and to deploy movable trailers for local outdoor monitoring this fall as well. The primary objective of the study is to examine the relationship of outdoor particulate pollutants and childhood asthma. There are several additional objectives, and extensive monitoring for improved exposure assessment is a key component of the study. The home-intensive will include monitoring indoors and outdoors at 50 homes during two seasons of the year for a large list of pollutants and asthma triggers. The trailers will be located at various sites around the greater Fresno area during the next 1-2 years, generally near schools, to improve our understanding of ambient pollutant levels throughout the greater Fresno study area and improve estimates of the children's exposures to pollutants of outdoor origin. Contact: Jeff Yanosky, jyanosky@arb.ca.gov
- A Battelle investigator recently brought 4 improved indoor NO₂ monitors to ARB that were developed under ARB funding. ARB's Monitoring and Laboratory Division staff will now test the monitors in the lab over the next few months. Pending the results of those tests, ARB hopes to further field test the monitors in ARB-sponsored field studies discussed above to demonstrate and confirm the monitors' suitability for indoor monitoring in future field studies. Contact: Dorothy Shimer, dshimer@arb.ca.gov

Other Projects. ARB's Indoor Program staff is contributing to the preparation of the review of the State PM₁₀ ambient air quality standard. A draft document is due out later this year, and ARB expects to take a proposal to the Board in 2002. The review is being conducted as part of the work required under SB25, the Children's Environmental Health Protection Act, and under ARB's general authority to set ambient air quality standards. For more information, see ARB's web page (www.arb.ca.gov).

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California Department of Health Service / Environmental Health Investigations

Branch -- Sandra McNeel (SMcNeel@dhs.ca.gov)

<http://www.dhs.ca.gov/ps/deodc/ehib/>

Investigations. Staff are finalizing the report from a telephone survey of local environmental health departments that identifies the types of services they provide to residents with indoor mold questions or contamination. (Contact Sandy McNeel smcneel@dhs.ca.gov 510-622-4457).

Legislative activities. Two of the three bills introduced this session addressing various aspects of indoor mold contamination are still active. These are:

- AB 284 (Jackson) - requires CDHS to establish a toxic mold surveillance, monitoring and education program.
- SB 732 (Ortiz) - adds presence of mold to substandard housing code, charges CHDS to develop permissible exposure limits for indoor mold (or if PELs are not feasible, develop another form of guidance to assist local health & building officials in determining when indoor mold constitutes a health hazard), requires disclosure of mold presence for real estate transactions and property leases, provides authority for local health or housing officials to require remediation of mold contamination in rental buildings, charges CDHS to develop standards for investigation and remediation of indoor molds and mandates the Department of Consumer Affairs to develop criteria for education and certification or licensing of those who investigate or remediate moldy buildings.

Presentations. Staff discussed indoor fungi and health effects with the Board of Directors of the California Conference of Local Health Officers and with a local association of property managers in Petaluma.

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California Department of Health Service / Indoor Air Quality Section

-- Jed Waldman (JWaldman@dhs.ca.gov)

<http://www.cal-iaq.org>

BASE Study. The U.S. EPA is funding a contract for the IAQ staff to continue their review of data sets from the Building Assessment & Survey Evaluation (BASE) study of 100 buildings. Key efforts will be looking at the vast and complex data on bioaerosol measurements. DHS authors will present at the ASHRAE conference (IAQ 2001), November 4-7, 2001 in San Francisco, a paper entitled, *Prevalence of Culturable Airborne Fungi in 100 U.S. Office Buildings in the Building Assessment Survey and Evaluation (BASE) Study*. Contact: Kai-Shen Liu, KLiu@dhs.ca.gov.

Environmental Tobacco Smoke (ETS) Study. Chamber experiments at LBNL are nearly completed. A number of experiments were conducted to investigate the effects of open plenum between the smoking and adjoining non-smoking rooms. The results of the door opening experiments prompted us to plan some experiments with sliding door and no door at all – not part of our original proposal. We anticipate conducting field experiments through mid or late summer. We have completed our survey of California local tobacco control jurisdictions and their restrictions

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smoking rooms. In June, we submitted our Annual Progress Report to TRDRP. We are continuing to analyze the CTS survey data. Contact: Leon Alevantis, Lalevant@dhs.ca.gov.

Portable Classroom Study. [See related note under ARB.](#)

Sierra Radon Survey. We have retrieved radon monitors from the 25 elementary schools in our survey, after 9-10 months monitoring. Laboratory analyses will be completed this summer, and we are preparing to send out notification of results to school officials. Contact: Feng Tsai, FTsai@dhs.ca.gov.

Emissions of Building Materials With High-Recycled Contents. The CIWMB is funding a study to measure emissions of building materials with high recycled contents and compare them to their virgin counterparts. Building materials will include portable classroom construction as well as conventional state construction. IAQS staff will coordinate activities through a contract with the Public Health Institute. An unofficial advisory committee has been formed consisting of representatives from various state agencies, a national laboratory, and two private consultants. The committee met on June 6. Contact: Leon Alevantis, Lalevant@dhs.ca.gov.

Conference Presentations.

- Leon Alevantis and Jed Waldman are participating in the Greening of the State Capitol, a multi-agency effort to improve sustainability at the Capitol. A design charette has been scheduled for June 7 and 8.

National Committee Work.

- Janet Macher attended the NAS Committee on Air Quality in Cabins of Commercial Air Craft meeting in DC (Apr 16–17) and Woods Hole (May 30–31). The final draft report is due June 18
- Leon Alevantis was elected to a four-year appointment to the ASHRAE 62 committee on ventilation. .

Publications

Janet Macher has a chapter on “Sampling Biological Aerosols” with Harriet Burge in *Air Sampling Instruments for Evaluation of Atmospheric Contaminants*, 9th edition, newly published by ACGIH Air Sampling Instruments Committee.

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California Department of Health Service / Occupational Health Branch

-- Jim Cone (Jcone@ohb.org), and Liz Katz (Ekatz@dhs.ca.gov) <http://www.ohb.gov>

Molds Presentation to Real Estate Inspectors. The HESIS Industrial Hygienist spoke jointly with Sandra McNeel, DVM, of the Environmental Health Investigations Branch, at a meeting of the California Real Estate Inspectors Association (Central Valley Chapter). The meeting was heavily attended. Most inspectors reported that home buyers expected them to assess mold hazards. They

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were also concerned about their own health risk during inspections. The meeting was held in Sacramento on July 17.

Hexane Use in Vehicle Repair: Occupational and Environmental Aspects. HESIS issued a Health Hazard Advisory about n-hexane's nerve toxicity. The California Department of Toxic Substances Control is printing and distributing this 4-page publication jointly with HESIS. The advisory contains information about water-based alternative cleaners, health hazards, regulations, and recognizing products that contain n-hexane as an ingredient. Copies can be requested by calling (510) 622-4238 or downloaded at <http://www.dhs.ca.gov/ohb/hesis/nhexane.pdf>.

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California Department of Industrial Relations (Cal/OSHA)

– Bob Nakamura (bnakamura@hq.dir.ca.gov)

<http://www.dir.ca.gov/dosh/>

Airborne Contaminants: 8CCR 5155. The Division has begun to review more changes proposed by the ACGIH. The first meeting of the advisory committee was on May 4, 2001. The next meeting will be on June 22nd in San Francisco at Cal/OSHA headquarters. The Division coordinator is Bruce Wallace who can be reached at 415-703-5165.

Laboratory Fume Hoods: 8CCR 5154.1. The Division has convened five advisory committee meetings to evaluate two different petitions requesting the Standards Board to reduce ventilation rate requirements and establish a performance standard in place of the existing regulation that relies on face velocity measurements. The last meeting was on January 23rd in San Francisco. Another draft proposal was presented and discussed by the attendees but no final proposal was adopted. Another meeting is planned for this Summer. The Division coordinator is Bruce Wallace who can be reached at 415-703-5165.

Heat Stress Standard. The Division has held two advisory committee meetings to review the need and issues involved in proposing a standard for heat stress. The last meeting was on October 24, 2000 in Oakland. A draft proposal was reviewed at the meeting, and revisions will be forthcoming based on the outcome of the meeting. Another meeting is planned for late July or early August. For more information, contact Bob Barish at 415-703-5100.

Revision of the Sanitation standard, GISO 3362. HESIS proposed language to the Division to change the sanitation standard to specifically identify mold as an unsanitary condition that must be corrected by the employer. This is being processed as a clarification to the existing standard rather than a major revision or adoption of new requirements. The Cal/OSHA Standards Board reviews the proposal to assure that it conforms to administrative law requirements, and then has it legally posted as a proposed change to administrative law. The existing regulation, Title 8, Calif. Code of Regulations; General Industry Safety Orders: Article 9 Sanitation Section 3362(a), reads as follows:

To the extent that the nature of the work allows, workplaces, storerooms, personal service rooms and passageways shall be kept clean, orderly and in a sanitary condition. The interiors, exteriors and environs of buildings that contribute to a hazard to which

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these orders apply shall be cleaned and maintained in such conditions as will not give rise to harmful exposure, as defined in Section 5140.

Once the proposal reaches its final form and goes to notice, it will be viewable at the Standards Board's web site at: <http://www.dir.ca.gov/OSHSB/oshsb.html>. For questions, contact Bob Nakamura at 415-703-5160.

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Lawrence Berkeley National Laboratory / Indoor Environments Program

-- Mike Apte (MGAPte@lbl.gov)

<http://eetd.lbl.gov/iep/iep.html>

The IED is involved in a wide array of ongoing research projects relating to IAQ. Program information is available at the web site.

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Office of Environmental Health Hazard Assessment / Indoor Air Risk Assessment Group

-- Richard Lam (RLam@oehha.ca.gov)

<http://www.oehha.org/>

SB 25. OEHHA released a draft document "Prioritization of Toxic Air Contaminants - Children's Environmental Health Protection Act" to solicit public comments. This draft document has been developed by OEHHA for use in implementing SB 25, the Children's Environmental Health Protection Act. OEHHA is required to develop, by July 1, 2001, a list of up to five chemicals identified as Toxic Air Contaminants that may cause infants and children to be especially susceptible to illness. The draft document includes a) a description of the prioritization process, b) summaries for chemicals (acrolein; benzene; diesel exhaust particulate matter; polychlorinated dioxins, furans, and biphenyls; formaldehyde; glycol ethers; lead; mercury; PAHs; and vinyl chloride) considered priority candidates for the list. After review, the state's Scientific Review Panel on Toxic Contaminants supported the selection of the five chemicals: acrolein; diesel exhaust; polychlorinated dioxins, furans, and biphenyls; lead; and PAHs. The document and draft responses to the comments to the document are available from:

http://www.oehha.ca.gov/air/toxic_contaminants/FRcomTAC701.html.

East Bay Children's Respiratory Health Study. This is a cross-sectional study of school aged children and examines the relationship between respiratory health and exposure to traffic-related air pollutants. Ten schools in a Northern California area based on their proximity to major roadways were selected. Approximately 1600 third and fourth graders participated. The child's respiratory health and his/her home environment will be assessed through parental responses (questionnaire). To date, the response rate to the student's and teacher's questionnaires is 71% and 89%, respectively. At each school the average concentrations of indoor and outdoor pollutants such as PM2.5, PM10, nitrogen oxides, ozone, VOCs (methylcyclopentane; 2,2,4-triethylpentane; benzene; m,p-xylene; o-xylene; undecane; dodecane; toluene; ethylbenzene; 3-ethyltoluene) and CO were measured. Contact person: Janice Kim, Jkim@oehha.ca.gov.

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Gasoline Emissions workshop. A scientific meeting on the "Issues in the Assessment of Health Impacts of Gasoline Emissions in California" was held on June 12-13, 2001 at the UCLA Faculty Center, Los Angeles, CA. In this meeting California's experience with MTBE was highlighted to evaluate human and environmental health risks from exposure to fuel components currently in use and proposed for future use. As part of this effort, OEHHA has begun research in the area of health risk assessment of gasoline-related exposures (exhaust, evaporative emissions, and atmospheric transformation products) in California. A summary of the presentations given in the scientific meeting is available online:

http://www.oehha.ca.gov/public_info/gasmeeting.html (follow the link to download the summary from the meeting, 08/08/01).

Green Building Taskforce. OEHHA is a member of the taskforce and has worked with other members of the group on various documents including the "Building California's Sustainable Future - A Blueprint for State Facilities", the Green Building Tier1/2 list, and the LEED Supplement for California State Facilities. OEHHA has also provide input to other agencies on building material emissions of VOCs, and use of janitorial and cleaning products.

Environmental Protection Indicators for California (EPIC). The Cal/EPA has delegated responsibility to OEHHA for developing environmental indicators which will enable Cal/EPA to refine goals, efficiently allocate resources, and promote greater accountability in the State's environmental programs. An account of the program, project update, working draft documents, and presentations from a recent conference on EPIC is available at:

<http://www.oehha.org/multimedia/epic/index.html>.

Proposition 65. OEHHA has provided an update on the recent major Proposition 65 activities. This includes an account of the development of the Safe Harbor numbers, clarification of the Prop 65 regulations, petition to amend Clear and Reasonable Warning Regulations, progress report on listing activities, and delisting of chemicals from the Prop 65 list. This update is available at:

<http://www.oehha.ca.gov/prop65/background/81601jdl.html>.

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U.S. EPA Region IX / Indoor Environment Team <http://www.epa.gov/iaq/>

-- Barbara Spark (spark.barbara@epamail.epa.gov)

New phone numbers. In October 2001, the phone system at the EPA Region 9 offices will change, and we will be getting new phone numbers. E-mail addresses will still be functional.

Mold Remediation guidance document on-line. The new EPA document, *Mold Remediation in Schools and Commercial Buildings* was web-published April 17, prior to the print release in early fall. The PDF version immediately attracted a huge audience - with 53,000 "hits" in the first two weeks, and more than 150,000 "hits" in the first two months. The document can be found at <http://www.epa.gov/iaq/molds/index.html>.

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I-BEAM software launched. EPA has created *IAQ Building Education and Analysis Model* (I-BEAM), an interactive software program that integrates IAQ, energy efficiency and building economics into a unique building management tool. The software can be downloaded from the EPA IAQ web page. For information on this and other “large building” resources, see <http://www.epa.gov/iaq/largebldgs/index.html>.

IAQ Tools for Schools hotline. A technical and non-technical “hotline” for questions about implementation of *IAQ Tools for Schools* will be operated for EPA by the University of Wisconsin at Madison, College of Engineering, HVAC and Research Center. This info line will be up, running, and road-tested by late September. This group has run tech hotlines for ASHRAE and EPRI. The phone number is 866-TFSEPA1 (866-837-3721). The USEPA Indoor Environments Division is preparing an announcement for widespread dissemination of this information when the project is ready; due to the quarterly nature of the IWG notes, we’re providing a “heads-up.” Please watch the EPA IAQ web page for the announcement prior to distributing this information: <http://www.epa.gov/iaq>.

LAUSD and IAQ Tools for Schools. An IAQ Advisory Committee has been formed for the Los Angeles Unified School District. Participants include representatives of a variety of district programs, as well as USEPA, the American Lung Association, and AIHA. Recent additions to the committee include Gene Ospital of SCAQMD, and Cynthia Verdugo-Peralta, Governor Davis’ appointee to the SCAQMD Governing Board. United Teachers of Los Angeles (UTLA) staff member Steve Cline is bringing innovative ideas to the district’s pilot program for “IAQ Tools for Schools.” LAUSD will be conducting environmental surveys of all its sites; Shelly Rosenblum has provided input to their checklist for IAQ. Contact: Shelly Rosenblum rosenblum.shelly@epa.gov.

CASBO and IAQ Tools for Schools. Barbara Spark is working with the California Association of School Business Officials (CASBO) to launch collaborative actions in support of implementation of the “IAQ Tools for Schools” program across the state. Contact: spark.barbara@epa.gov

Asthma-related activities. Barbara Spark participated in the California asthma statewide strategy meeting convened by DHS Asthma Program. There was excellent information sharing, and it was determined that additional work would be needed before the strategy could be completed.

Barbara Spark provided a presentation to the “Allies Against Asthma” community project at Long Beach Memorial Hospital. This is one of eight projects nationally funded by the Robert Wood Johnson Foundation to develop pilot programs. Dr. Gary Rachelevsky of UCLA provided an introduction to asthma for both medical and community participants in the project. He noted that probably 60-70% of children with asthma have chronic inflammation of their airways – just waiting for the next asthma trigger. Barbara Spark spoke on indoor environmental triggers for asthma.

The national RWJ “Allies Against Asthma” project (based at the University of Michigan School of Public Health) is creating a “Resource Bank” to support community coalition-based efforts to improve pediatric asthma care. They’ve put out a call for a variety of materials, including

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environmental assessment tools. For more information, see

http://www.asthma.umich.edu/resource_bank/

Mold Litigation conference. Barbara Spark joined Sandra McNeel as speaker at the June “Mealeys Mold Litigation Conference” in Los Angeles, in the section addressing government activities related to mold. This was the second such event in Los Angeles, and the third nationally since November 30, 2000. Four more conferences are pending. However, Mealeys continually fine-tunes the event (including for different parts of the country), and has now eliminated the section on government activities. For a perspective on the direction they’re going in programs for Chicago, Palm Beach, Pasadena, and Texas can be viewed at http://www.mealeys.com/sem_agen.html.

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WORKING GROUP COMMITTEES

Indoor Environmental Quality of Schools

-- Jed Waldman (JWaldman@dhs.ca.gov)

Informal Group on IEQ in School Studies. The group has met monthly in Berkeley, starting on April 11 with participation by DHS, ARB, OEHHA, DTSC, CDE, DSA, CHPS, UCB, University of Texas-Austin, LBNL, U.S. EPA-Region IX. At the first meeting, researchers shared descriptions of the more than 10 ongoing studies related to environmental health in schools. At the May 2nd meeting, the topic for discussion was *On-Site Assessments (Technician Walk-Through Checklists, Incl. Ventilation)*. At the June 6th meeting, the focus was *School Databases and Demographics, plus Making Contact with Districts/Schools*. Staff from the CDE Educational Demographics Office also participated. Future meetings are scheduled for July 11th, August 8th and September 12th.

Collaborative for High Performance Schools. A workgroup is continued efforts to develop a set of Eligibility Criteria to be used by school districts and funding agencies in self-certifying High Performance School design and construction. The CHPS manual and related documents are available at the web site: <http://www.chps.net/>.

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Building Design and Operations

-- Leon Alevantis (LAlevant@dhs.ca.gov)

Procurement Task Force. A working group to address sustainability issues in State Procurement has been formed. A number of state agencies are represented including DHA and ARB. A draft Executive Order on procurement issues is being worked on as well as a bill to address some issues related to SABRAC. A list of soon to expire contracts has been assembled. A similar list will be developed for building materials on CMAS.

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FUTURE MEETINGS

Upcoming meetings of the CIWG-IAQ are scheduled as follows:

- September 12, 2001, CalEPA Building, 10th & I St., Sacramento
- December 12, 2001, Department of Health Services, 2151 Berkeley Way, Berkeley
- March 13, 2002, CalEPA Building, 10th & I St., Sacramento
- June 12, 2002, Department of Health Services, 2151 Berkeley Way, Berkeley

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